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Nota di contenuto	Intro -- Title Page -- Copyright -- Dedication -- Foreword -- Preface -- Acknowledgments -- Acronyms -- Chapter 1: Introduction to Power Integrity -- 1.1 Definition for Power Integrity -- 1.2 Historical Perspective on Power Integrity Drivers -- 1.3 First Principles Analysis -- 1.4 Scope of the Text -- References -- Chapter 2: Introduction to Platform Power Conversion -- 2.1 Power Distribution System -- 2.2 Platform DC-to-DC Power Conversion -- 2.3 Layout and Noise Considerations -- 2.4 Summary -- References -- Problems -- Chapter 3: Review of Electromagnetic Field and Circuit Representations -- 3.1 Vectors and Scalars -- 3.2 Static Fields -- 3.3 Maxwell's Equations -- 3.4 Useful and Simple Circuit Extractions -- 3.5 Summary -- References -- Problems -- Chapter 4: Power Distribution Network -- 4.1 The Power Distribution Network -- 4.2 PDN Elements -- 4.3 Impedance Distribution Analysis -- 4.4 Summary -- References -- Problems -- Chapter 5: Power Integrity Time-Domain and Boundary Analysis -- 5.1 Source and Load Modeling -- 5.2 Time-Dependent Systems -- 5.3 Impedance/Load Boundary Analysis -- 5.4 Summary -- References -- Problems -- Chapter 6: System Considerations for Power Integrity -- 6.1 Power Loadline Fundamentals -- 6.2 Noise Generation Considerations in Power Integrity -- 6.3 Power Noise Reduction Techniques -- 6.4 EMI Considerations for Power Integrity -- 6.5 Power Integrity PDN in System Measurements -- 6.6 Summary -- References

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7.1 Silicon and Package Power Integrity -- 7.2 Silicon and Package
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Sommario/riassunto

An all-encompassing text that focuses on the fundamentals of power integrity Power integrity is the study of power distribution from the source to the load and the system level issues that can occur across it. For computer systems, these issues can range from inside the silicon to across the board and may egress into other parts of the platform, including thermal, EMI, and mechanical. With a focus on computer systems and silicon level power delivery, this book sheds light on the fundamentals of power integrity, utilizing the author's extensive background in the power integrity industry and unique experience in silicon power architecture, design, and development. Aimed at engineers interested in learning the essential and advanced topics of the field, this book offers important chapter coverage of fundamentals in power distribution, power integrity analysis basics, system-level power integrity considerations, power conversion in computer systems, chip-level power, and more. Fundamentals of Power Integrity for Computer Platforms and Systems: Introduces readers to both the field of power integrity and to platform power conversion Provides a unique focus on computer systems and silicon level power delivery unavailable elsewhere Offers detailed analysis of common problems in the industry Reviews electromagnetic field and circuit representation Includes a detailed bibliography of references at the end of each chapter Works out multiple example problems within each chapter Including additional appendixes of tables and formulas, Fundamentals of Power Integrity for Computer Platforms and Systems is an ideal introductory text for engineers of power integrity as well as those in the chip design industry, specifically physical design and packaging.
